Do religious "beliefs" respond to evidence?

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Abstract: Some examples suggest that religious credences (or "beliefs") respond to evidence. Other examples suggest they are wildly unresponsive. So the examples taken together suggest there is a puzzle about whether descriptive religious attitudes respond to evidence or not. I argue for a solution to this puzzle according to which religious credences are characteristically *not* responsive to evidence; that is, they do not tend to be extinguished by evidence contrary to them. And when they appear to be responsive, it is because the agents with those credences are playing what I call The Evidence Game, which in fundamental ways resembles the games of make-believe described by Kendall Walton's (1990) theory of make-believe.

1 Introduction: Evidence and Attitudes

Are religious attitudes responsive to evidence? I mean this as a question of psychological fact: if people encounter evidence that suggests the contents of their religious attitudes aren't true, are they inclined to discard those attitudes?

My concern, specifically, is with religious "beliefs," especially ones that have *descriptive* contents. A "belief" *that God heals people who pray* has descriptive content; a "belief" *that one must not eat shellfish* doesn't (those contents are normative). Religious "beliefs" with descriptive contents are the ones for which the question of responsiveness to evidence is most interesting, since those are the ones with contents on which evidence can obviously bear.

So our question comes to this: are religious "beliefs" with descriptive contents responsive to evidence, as a matter of psychological fact?

I put "beliefs" in scare quotes because there is a kind of cognitive attitude I call *religious credence* that is distinct from *factual belief*, and uncritical use of the word "belief" obscures this distinction, as I argue in previous work (2014a). Religious credences (of the sort I focus on) have descriptive contents, but I maintain they differ from factual beliefs in the following ways:

(i) they turn on and off for purposes of guiding action, depending on whether one is in a religious or identity-testing situation (this is *practical setting dependence*);
(ii) they don't govern inferences in the default, widespread way factual beliefs do (they lack *widespread cognitive governance*); and
(iii) they don't tend to get extinguished by contrary evidence in the way factual beliefs do (they lack *evidential vulnerability*). [This is the issue at hand.]

In addition, religious credences have further striking properties of their own: (a) they give *perceived normative orientation* in life (though their contents aren't normative, religious agents take themselves to be doing good in virtue of acting on them[1]); (b) they are susceptible to *creative elaboration* that generates new credences; and (c) they are *vulnerable to special authority*: certain individuals—priests, shamans, gurus—are empowered to dictate their contents.

Hence, this paper is part of a larger project. I aim to determine whether it's worth including *lack* of evidential vulnerability (feature (iii)) in the characterization of religious credence, assuming it's worth carving out that category at all. In other words, do religious mental states—ones that by hypothesis fit descriptions (i), (ii), (a), (b), and (c)—also fit (iii)? That is, do they lack evidential vulnerability?

My thesis is this:

> **The Evidence Game Thesis:** religious credences are not evidentially vulnerable, and their *appearance* of evidential responsiveness is typically due to an agent's deployment of internal and external religious *props* (r-props), which function in religious enactments, including what I call The Evidence Game, in ways that parallel how props function in games of make-believe.[2]

My view, in short, is that when religious actors say things that make it sound like their credences respond to evidence, they are typically—consciously or not—engaged in a game that resembles make-believe play and deploys largely the same psychological mechanisms. This view unifies apparently evidence-tracking religious behavior with overtly prop-oriented ritual, such as praying before a statue or wearing a mask to represent an ancestor. Overtly prop-oriented ritual clearly deploys many of the cognitive resources of make-believe play; on my view, though it's less obvious, *apparently* evidence-tracking religious behavior deploys these resources too.

In section 2, I argue there is a puzzle to be solved, since examples that concern whether religious credences respond to evidence seem to point in two opposed directions. In section 3, I present a theory designed to solve this puzzle in a way that coheres both with the examples and with other plausible views about relevant portions of human psychology. Section 4 addresses a potential objection. And section 5 concludes by considering why, on my view, individuals inclined toward science might also be inclined to abandon religious credence.

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[1] This is similar to an idea from J. David Velleman. Velleman's "The Guise of the Good" (2000: ch. 5) makes the point that some attitudes have a "*faciendum*" (*to be done*) attitude valence, without having representational constituents such as *good* or *valuable*. So there are two ways an attitude can give normative guidance: through attitude valence or through content. I focus on valence.

[2] In explicating this thesis, I appeal to Kendall Walton's (1990) theory of make-believe. Most of what I say, however, could be re-formulated using other theories of make-believe play, since the features of make-believe play I appeal to are basic and highly general.

2 The Puzzle of Evidence Responsiveness

Some religious behaviors suggest that religious credences respond to evidence. Others suggest the contrary. So our puzzle is to make sense of these perplexing data, a fragment of which I now review.

2.1 Behaviors that Tell in Favor of Evidence Responsiveness

Saying a mental state responds to evidence means, *roughly*, that evidence relevant to its content can influence whether or not that state persists in an agent's mind. I sharpen this rough characterization below. But it's fair to say that on any psychologically realistic formulation of evidence responsiveness, it's not required that evidentially responsive mental states always respond properly to evidence; often they will respond inefficiently or even to poor evidence. With this qualification in mind, consider these familiar phenomena.

Intelligent design arguments maintain that positing an intelligent designer (a divinity) is needed to explain the appearance of design in nature. Such arguments falter post Darwin, since evolutionary processes explain such appearances far better than the purported intelligent designer.[3] But the religious credence that an intelligent designer exists *seems* to respond to perceptions of the biological world—in all its functional glory—as evidence. So we might conclude that religious credence *that there is an intelligent designer* responds to evidence to some extent.

Apologists often urge that their religious texts are *historical documents* or even "eye-witness accounts." Christian apologists, for example, often claim that the resurrection is supported by historical evidence, namely, the Gospels. So even if no religious texts are in fact historically accurate (or if all their supernatural portions are unhistorical), the fact that apologists seem to *care* about their historical status suggests that credences based on them might respond to evidence in some way.

Systematic theology in various traditions (Christian, Jewish, Hindu, Muslim) attempts to make theistic doctrines cohere with one another, as well as with observations of nature and canonical texts. The credences that issue from systematic theology therefore seem somewhat responsive to evidence in virtue of these demands for coherence and consistency with texts and natural data.

People often talk as if *unlikely fortunes* are evidence for their religious credences. If a person prays in a tiny boat in a deadly storm and lives, she might claim that such unlikely fortune shows that her god is real. Skeptics respond that this test is biased, because its disconfirming instances drown. Nevertheless, biased appeal to evidence may be responsiveness in some weak sense, so appeal to unlikely fortunes may suggest that some religious credences respond to evidence.

On the other hand, some *rejections* of religious credences also suggest that they respond to evidence. Some people claim that *encounter with science* caused them to lose religious faith. Religious credences are the descriptive cognitive attitudes in the psychological cluster constituting faith; if they were *not* responsive to evidence, the claim that science caused one to lose faith would seem to make little

[3] And Ockham's Razor then cuts the non-explanatory intelligent designer from our ontology.

sense. Otherwise put, one might argue that religious credences *are* responsive to evidence[4], and that's why science can destroy them.

Moreover, religious actors often *avoid evidence* that seems like it could disconfirm their credences. Such avoidance might suggest (ironically) that religious credences respond to evidence after all. Why avoid that which wouldn't have an effect anyway? Intercessory prayer seems to illustrate such avoidance. Justin Barrett (2001) presents four studies that suggest people are more likely to pray for divine interventions that involve psychological or biological changes than for interventions that involve mechanical changes; in other words, they are more likely to pray for God to change someone's mind than for God to plug a leak in a boat. Barrett's Study 4 is instructive; of seventy participants, only *two* reported on a questionnaire that they would pray for a divine intervention that would violate physical regularities (by way of contrast, fifty-seven and forty-nine said they would pray for psychological and biological interventions, respectively). One explanation for such data (but not the only one[5]) is that people are avoiding creating situations that would produce counterevidence to their credences about God (e.g., credences with contents like *that God is omnipotent*, *that God answers prayers*, etc.). That avoidance suggests (again, ironically) that credences *would* respond to counterevidence, if it were encountered.

These phenomena and many like them suggest (or seem to suggest) that religious credences respond to evidence, though perhaps badly. So should we then conclude that religious credences are no different in this regard from factual beliefs, which also respond to evidence, but often only badly?

2.2 Behaviors that Tell Against Evidence Responsiveness

We shouldn't leap to that conclusion. The bulk of factual beliefs in fact respond to evidence so *well* (not perfectly) that their responsiveness doesn't even get noticed. Irrational processes stand out *because* they're exceptions to an overall pattern of rationality, as Donald Davidson points out.[6] Consider mundane factual beliefs about appointment times, train schedules, station locations, bank balances, inventory levels, items in the fridge, ingredients, prices at the store, the level of gas in your tank, travel routes, whether a lamp works, how tall people are, how many kids your colleague has, whether he owns a cat, etc. Beliefs about these everyday topics err frequently enough, but they *update* so easily that we don't even notice the updating. Evidence easily fixes them. Looking at a train schedule, reading a bank statement, studying an ingredients list, noticing the gas gauge, or hearing your colleague talk about his cat—any of these evidential experiences updates your relevant factual beliefs so swiftly that you scarcely notice.[7] In contrast, even the

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[4] cf. Maarten Boudry and Jerry Coyne (2016a, 2016b); see my 2016 for my response.

[5] Maarten Boudry and Johan De Smedt (2011) argue that people's failure to pray for what is physically impossible can be explained by processes of cultural selection. There may be something to this explanation, but its correctness needn't concern us at this point, since all we are doing is highlighting how certain appearances generate a puzzle to be solved.

[6] Donald Davidson (1984) is, in my opinion, his best development of this view.

[7] For studies that show how good young children are already at updating beliefs, see Melissa Koenig and Paul Harris (2005) and Renée Baillargeon (2002). The first study addresses how children figure

apparently evidence-responsive credences just discussed don't update well at all. Furthermore, plenty of religious credences don't even *seem* to respond to evidence.

Doomsday cults can continue even *after* their prophesied dates for the end of the world have passed (Festinger *et al.* 1956; Boyer 2001: 302). This alone should baffle anyone who insists that religious "beliefs" are just like factual beliefs but with different contents.[8] The lack of evidential responsiveness on the part of doomsday credences is astonishing.[9]

Young earth creationism is also often impervious. No amount of rock strata, dinosaur fossils, carbon dating, plate tectonic patterns, or astronomical evidence can shake the religious credence, common among fundamentalist Baptists, that the world began less than 10,000 years ago.[10] It's true that the contents of such credences aren't as exposed to direct disconfirmation as, say, the content of the factual belief *that my lamp still works*. But the evidence for the age of the earth is easily strong enough—and well enough known—to strongly suggest that the religious credences of young earth creationists just do not respond to evidence.

Relatedly, *evolution denial* usually stems from a religious credence that evolution has not occurred; it is also often impervious to evidence. Viruses and bacteria evolve in our own bodies, yet many people who know this (under a different description) deny there is evolution. And viral and bacterial change due to selection pressure is only the tip of the iceberg of evidence for evolution.

Religious invention is often indifferent to evidence too. Oliver Huntington, of the Mormon Church, furnishes this example in his journal, reporting some lesser-known credences of church founder Joseph Smith, who held:

> The inhabitants of the moon are more of a uniform size than the inhabitants of the earth, being about 6 feet in height. They dress very much like the Quaker style and are quite general in style or the one fashion of dress. They live to be very old; coming generally, near a thousand years.

This level of inventive detail is impressive. One might argue that there is evidence for alien life. But it makes no sense to argue that that purported evidence in any way supports six-foot, Quaker-clothed, thousand-year-old moon inhabitants.

The credences just canvassed are a sample of what could be a compendium of evidence-*un*responsive credences. Importantly, these credences aren't

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out what sources are reliable, and the second, which is a survey of a well-developed research program, is about how children learn object statics.

[8] That is, it should baffle people like Sam Harris *et al.* (2009).

[9] One might suggest (and Referee 1 has suggested) that the apparent lack of responsiveness to evidence on the part of doomsday cults' "beliefs" can be explained by the structures of their belief systems, which incorporate contents that immunize them as a whole from refutation. If one thought this, one might *also* think that individual religious credences *are* evidence responsive, even if they are embedded in a system whose contents prevent them from being refuted by evidence. I agree with the suggestion that such ideologies have self-immunizing contents, but I hold that self-immunizing contents *add to* the evidential invulnerability of religious credences as an attitudes type, rather than providing an alternate explanation. I expand on this point in section 4.

[10] We of course need an answer to the question of what people are doing when they claim to reinterpret such evidence so as to appear to support their creationism; my theory below offers an answer.

unresponsive to evidence just because their *contents* are vague. Many of their contents are clear enough that evidence could bear on them. So it appears to be something about the *attitude* itself that is unresponsive.[11]

2.3 Theoretical Options

Some religious credences seem to respond to evidence and some don't. So do religious credences respond to evidence or not? How should we solve this puzzle? I see three strategies.

First, we might say religious credences *do* respond to evidence and attempt to explain away the apparent unresponsiveness in the just-cited phenomena as due to *overriding* factors, such as emotions or social pressure. Alternately, one might say some features of the contents of credence systems make these attitudes immune to evidential refutation, even if the attitudes themselves are evidentially responsive.

Second, we might say that religious credences *don't* respond to evidence, arguing that *other* psychological facts explain the *appearance* of responsiveness in some cases.

Third, we might divide and conquer, maintaining that some religious credences respond to evidence and some don't.

I find the first strategy is unpromising: the examples of unresponsiveness are too striking for us to maintain that religious credences generally respond to evidence. Furthermore, I explain in section 4 why I think a "content only" approach to explaining evidential unresponsiveness is unlikely to work. So my approach combines the second and third strategies, leaning more on the second.

My nod to the third strategy ("divide and conquer") is this. Though the vast majority of religious credences are *not* evidentially vulnerable (a notion I explain below), some of them might be. The reason for this is that the properties that characterize religious credence define a region in a multi-dimensional property space; religious credences form a cluster in this region. It is possible, however, that some attitudes with *most* features of religious credence stray from the cluster with respect to *one or two* of the properties. In one kind of case, a rare credence might in fact respond to evidence. Call an attitude like this a religious#credence. It is perfectly normal for clusters in multi-dimensional spaces to have fuzzy edges, even if there are reasons why the cluster as a whole hangs together and forms an *attractor position* (Sperber 1996; McCauley and Lawson 2002).

Still, most examples of *apparent* responsiveness to evidence on the part of religious credences are suspicious. They seem like opportunistic justifications for clinging to what one was going to cling to anyway. Furthermore, *genuine* responsiveness to evidence would undermine some other cultural functions religious credences characteristically have. For example, the evidential immobility of credences makes them good *indicators* of allegiance to a religious in-group:

[11] Boudry and Coyne (2016a) suggest that many of the unusual properties of religious "beliefs" can be explained by appealing to their vague, semi-propositional contents. Religious beliefs are different from factual beliefs, on this view, not because the attitude is different, but because the contents are wishy-washy. My point here is that that strategy can't *always* work for explaining the differences, especially when it comes to pervasive unresponsiveness to evidence.

people with attitudes that defy evidence behave in striking ways that clearly mark their commitment to the group (Sosis and Alcorta 2003; Norenzayan 2013: ch. 7). Otherwise put, if my credence that *our* god exists can be banished by something so trifling as mere evidence, how can you be sure that I'm really committed to *our* group, which defines itself by allegiance to *our* god? Taking this point into account, we should expect religious credences mostly not to respond to evidence. Accordingly, apparent responsiveness mostly isn't genuine, which is why I lean more on the second strategy. (These considerations also explain why so many religious credences might be regarded as "useful false beliefs," though "useful" and "beliefs" need to be qualified: many religious credences with false contents persist precisely because they don't respond to evidence; they are nevertheless useful for purposes of maintaining a committed in-group; and they are "beliefs" only under one disambiguation of the word "belief"—"belief" is often just used in everyday speech to refer to religious credence, as opposed to factual belief[12].)

Let's now sharpen the intuitive notion of evidence responsiveness. Doing this will allow us to say precisely what religious credences lack. Then we can say how some credences manage to *seem* responsive to evidence, even when they are not.

I define *evidential vulnerability* recursively.

i. If cognitive attitude *x* is involuntarily prone to being extinguished if (a) it conflicts with perceptual states or if (b) it is realized to lead to a contradiction, then *x* is evidentially vulnerable.
ii. If cognitive attitude *x* is involuntarily prone to being extinguished if it contradicts or does not cohere with other evidentially vulnerable states, then *x* is evidentially vulnerable.
iii. No other cognitive attitudes are evidentially vulnerable.[13]

Note this definition is about how evidence *extinguishes* attitudes, not about how it helps form them. I construct the definition this way because almost any cognitive attitude can be *caused* by evidence in its favor: hypotheses, assumptions for the sake of argument, and even fictional imaginings can arise from cognitions that would in some way support their contents.[14] Furthermore, I include the term "involuntarily," because several cognitive attitudes that are not factual beliefs, such as hypotheses, do tend to get extinguished by contrary evidence, though the extinction is by choice. Only factual beliefs *involuntarily* get *extinguished* by countervailing evidence. For example, seeing that the water cooler is empty—*poof!*—extinguishes your factual

[12] Heiphetz, Landers, and Van Leeuwen (manuscript) present empirical evidence that in ordinary American English "believes" is used more for religious credences, while "thinks" is used more for factual beliefs. If this is so, then at least one language seems to track a distinction that many philosophers and cognitive scientists fail to make.

[13] This is the same definition as in my 2014a. A more full characterization of evidential vulnerability would be structured so as to rule out deviant causal chains, but doing this is unnecessary for my present purpose, which is to distinguish cognitive attitudes, rather than give a complete and final theory of evidential vulnerability.

[14] For example, seeing someone dance well at a party can cause you to fictionally imagine he is a professional dancer.

belief that it was full; you couldn't maintain that factual belief if you wanted to (you could only pretend to, which is not the same thing). So defining evidential vulnerability in this fashion carves a natural joint in the class of cognitive attitudes: factual beliefs are distinctive in that you can't hang on to them in the face of strong counterevidence, *even if you try*.[15]

Even the main examples of religious credence from 2.1 don't appear to be evidentially vulnerable. Intelligent design arguments, claims of historicity, and appeals to unlikely fortunes all involve religious credences that show little or no tendency to be extinguished by contrary evidence. Systematic theology's credences are trickier, because they seem to show evidential vulnerability to canonical texts. But if the religious credence *that the canonical texts are divine* is itself not evidentially vulnerable, then the appearance of evidential vulnerability on the part of other religious credences in systematic theology is just an appearance (more on canonical texts below).

What I owe now is an explanation of why many religious credences appear to be evidentially responsive, even though they are not in the relevant sense. I now develop such a theory by reshaping Walton's (1990) theory of prop-based make-believe. I apply the reshaped theory to what I call games of religious enactment, which include rituals in which props (or *r-props*) stand in for entities in a religion's ontology, like deities or ancestors. Rituals are of course one form of religious enactment. But The Evidence Game, in which people claim evidence for their religious credences, is another, and it also uses r-props.

3 R-Props and Make-Believe

Consider sacrificial religious rituals. The animal sacrifice is supposed to be for the gods, ancestors, or whatever supernatural agents desire the meat. But almost invariably, the people who do the sacrificing eat the meat *themselves*. People give various rationalizations for this, such as that the gods share meat that is rightfully theirs. But the make-believe character of sacrificial rituals is unmistakable.[16] People eating meat that the gods supposedly wanted resemble children who pretend their dolls want cookies and then, after pretending to feed the dolls the cookies, eat the cookies themselves. In the latter case, cookies are props in a game of make-believe, in which imagined agents eat their desired cookies. In the former case, the roasted meat is an *r-prop* (religious prop) in a game of religious enactment, in which a creeded[17] supernatural agent receives her desired meat. In both cases, given certain rules of the games, there are mappings from props (or r-props) to imagined (or creeded) propositions. So there is a *semi-objective character* to game-based imaginings and enactment-based credences: facts about the world *partly* determine

[15] Thus, the property that I define, evidential vulnerability, combines the kind of involuntarism about belief that Bernard Williams (1973) made famous with a version of the evidentialism that we see in more recent literature on belief.

[16] See Pascal Boyer (2001: 242 ff.) for interesting discussion of this issue.

[17] For brevity, I sometimes use the archaic verb "to creed" with the specific meaning *to have a religious credence*. The phrase "creeded supernatural agent" thus means *supernatural agent that someone has religious credences about*.

what is imagined or creeded—by way of props or r-props—but invented rules of the game do the rest.

This section develops this view, deploying Walton's notion of *prop*. How does doing this support the aims of this paper? Developing a *general* picture of how r-props work in religious practice allows us to say what is going on when religious credences *appear* to respond to evidence. R-props are entities in the world that, according to certain rules of a game, dictate some religious credences; and *some* r-props control credences in ways that resemble how evidence controls factual beliefs, without actually doing so *via* evidential vulnerability; hence the false appearance that those religious credences respond to evidence.

So this section has three parts. In 3.1, I explain Walton's view of make-believe, adding some observations of my own. In 3.2, I show how Walton's framework translates to religious enactment. And in 3.3, I apply this general approach to what I call The Evidence Game and the appearance of evidential responsiveness, thus resolving the puzzle from section 2.

3.1 How Make-Believe Works

Let's take Walton's classic example (1990: 37-44). Two kids are playing make-believe, pretending that they are in the woods with bears. They declare that any tree *stump* counts as a bear. So any time they encounter a tree stump, they are prescribed by the rules they created to imagine it is a bear and act accordingly, whether by running, fighting, or whatever. Furthermore, if there is a stump nearby that they do not see, there is, by the rules of the game, a bear nearby, *even if they don't know it*. So even though games of make-believe are made-up, there can be 'facts' about what's fictionally true in a game (that is, about what one is supposed to imagine), even though the players themselves don't know all the fictional 'facts.'

Tree stumps in Walton's example are *props*. Props in other games range from rocks to broomsticks to carefully crafted toys. They can be found or made. Intrinsic properties of an object don't determine whether it is a prop, though they can be more or less suggestive. Rather, being a prop or not is determined by whether one is playing make-believe and by what game one is playing: certain games classify certain objects as props and exclude others. A prop for one game is an obstacle in another. Prop classifications are to some extent up to the players, but often background conventions settle what is a prop for what game. And once one is playing make-believe with certain rules, what one imagines of a given prop is not entirely subjective. Much of what one imagines is determined by facts about the prop itself in conjunction with what Walton calls "principles of generation." If there are two stumps, there are, given the principles of generation, two bears, and that's that. It's fair to say also that, although Walton writes in terms of principles of *generation*, the sorts of principles under discussion also function as principles of *extinction*: if one was imagining that there was only *one* bear, seeing the second tree stump should extinguish that imagining to make way for imagining that there are 'really' two. In what follows, I keep Walton's terminology in tact, but ask the reader to keep in mind that there are two sides to principles of generation, generation and extinction, since this is relevant in what follows.

Let's regiment the central notions needed for understanding make-believe. Doing this sets us up for understanding religious enactment. (The specific regimentation below is my own, but it follows Walton's theory closely.)

(a) A *game of make-believe* is a game in which it is *prescribed* that one *imagine* certain propositions according to certain rules, where imagining is a *cognitive attitude* distinct from factual belief. (Example: in the bears game, upon seeing a stump one is *supposed to* imagine it is a bear; this is a *prescription* of the game.)

(b) The rules mentioned in (a) are *principles of generation*; they *generate* prescribed imaginings from facts about props.

(c) A *prop* is an entity *e* that, according to the principles of generation of the game, prescribes that one imagine a proposition of the form *p(e)*, which assigns *e* a certain imagined value. (Example: it is prescribed that one imagine *of* tree stumps [which are props] that they are bears.)

(d) A principle of generation is thus a *function* from facts about props to prescribed imaginings. Committed players of the game accept such functions consciously or unconsciously. Principles of generation have the form:

pg(fact about prop *e*) = IMAGINE: *p(e)*.

For example, in the bear game, the main principle of generation is:

pg_{bear}(tree stump's presence) = IMAGINE: *the stump is a bear*.

And many subsidiary principles flow naturally from the main one, such as:

pg_{bear}'(stump's being to the left) = IMAGINE: *the bear is to the left*.
pg_{bear}''(a bird's landing by a stump) = IMAGINE: *a bird is by the bear*.[18]

This regimentation is, of course, highly schematic; Walton's extensive development is rich and interesting. But this is already enough to help clarify games of religious enactment. A few notes are needed, however, to understand what comes next.

First, though principles of generation take facts as inputs and output prescribed imaginings, their *psychological instantiation* takes *factual beliefs* as inputs. For example, one *factually believes* there are two stumps in the meadow,

[18] Two points emerge here. First, there is an overarching *spatial* principle of generation that governs most games: the imagined entity's location maps to where its prop is (modulo transformations of distance, etc.). Second, a frequently used principle of generation is the identity map, according to which one just imagines entities as being what they are, like the bird who is a prop for an imagined bird.

which causes one to imagine there are two bears. Without this factual belief, it would still be a fictional 'truth' that there are two bears in the meadow, but the player wouldn't know to imagine it. It would remain to be 'discovered.' Thus, even though make-believe games are in some sense made up, many of a game's constituent events will feel like discoveries to the players. Otherwise put, players need factual beliefs about the props in order for them to come to have the proper imaginings in the game; and this is one of several ways in which factual beliefs are fundamental relative to other cognitive attitudes.[19]

Second, humans are so good at make-believe play that most of the psychological structure that supports it goes unnoticed. One isn't conscious of one's many subsidiary principles of generation for any game of make-believe; one just has them and imagines accordingly, especially when absorbed. One might even engage in make-believe without realizing that is what one is doing, such as when one adopts a certain artificial social role. This lack of second-order self-knowledge about what one is doing is perhaps a rarity in ordinary games of make-believe play, but I think it is entirely common and perhaps the rule in The Evidence Game.

Third, this all shows that there are psychological mechanisms that make imaginings partly constrained by facts about the outside world—facts about the props—and partly constrained by chosen principles of generation, many of which are made up on the fly. This is the above-mentioned *semi-objective* character of make-believe imaginings. Imaginings in make-believe play are thus two-faced, looking partly at the world—both for generation and extinction—and partly in the player herself.

Fourth (note well!), games of make-believe generate an implicit *exclusion class* of items that are *not* props in the game. (Precisely: *the exclusion class* of a game of make-believe is the class of items in the world that are not in the domain of the functions that constitute the game's principles of generation.) If we're in the kitchen playing Knights of the Round Table, for example, the round kitchen table is obviously going to be a prop. But the electrical coffee maker isn't, so it's in the exclusion class. One could, of course, contrive a way to make Mr. Coffee part of the game, but this would involve ignoring its parts and adding awkward principles of generation on the fly. Most likely the coffee maker will be ignored, lying in the exclusion class. This leads to another observation. Games of make-believe have powerful effects on *attention*. One attends to the items in the world that are props for one's game (stumps, round tables, dolls, etc.) and tends to ignore items in the exclusion class.[20]

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[19] In other papers (2009, 2014a, 2014b), I discuss other ways factual beliefs are fundamental.

[20] Another point about attention and imagination is relevant. Tyler Doggett and Shen-yi Liao (2014) argue that attention explains the phenomenon of imaginative immersion, such as when people are so immersed in the game they're playing that they seem to forget reality. On their view, we are immersed when we overwhelmingly attend to that which we imagine. This view importantly, helps us resist the claim, advanced by Susanna Schellenberg (2013), that immersion involves loss of a distinction between what is (factually) believed and what is imagined. The analogous point, applied to religious immersion, can help us resist the claim that religious immersion involves loss of a distinction between what is religiously creeded and what is factually believed.

3.2 The R-Prop View: Religious Enactment

Not every religious ritual has a make-believe character. Meditation, for example, is just meditation. So let's reserve the term *religious enactment* for religious rituals and practices that do have a make-believe character. Let's review some examples.

Anthropologist Tanya Luhrmann (2012) describes prayer practices of members of the Vineyard Christian Fellowship in Chicago, IL. When praying, if all goes well, they 'hear' God talking. I write 'hear' in single quotes, because Vineyard members mostly just have *auditory mental imagery* of God talking, not genuine perceptual experiences or hallucinations. But having auditory imagery of the right sort is still not easy (Boyer 2013). Rituals help. To achieve the desired experiences, many engage in overt pretend play, as advised by their pastors. Vineyard members often "walk and talk" with God or have God over for dinner or breakfast. People set an extra place for God at the table or pour Him a cup of coffee (Luhrmann, 74). Vineyard members use pretend play so much in attempting to learn to 'hear' God that Luhrmann's third chapter is simply called "Let's Pretend." She writes:

> I only knew one person in the Chicago Vineyard who really poured that second cup of coffee. But I knew people who talked about setting an extra dinner plate for God or pulling out a chair for him to sit on while they poured out their troubles. When they said those things, they often remarked that they didn't go as far as other people did. They were often a little embarrassed by what they'd done. (75)

Why the embarrassment? Luhrmann emphasizes that activities of Vineyard members resemble those of children playing with imaginary friends, even though Vineyard members studiously avoid speaking of God as "imaginary."

Ancient Egyptian royal tombs invariably include paintings or reliefs of servants and animals meant to provide for the pharaoh in the afterlife.[21] Producing such paintings was generative: painting a person or creature in the tomb generated credence that the corresponding entity would be in the afterlife. Egypt, of course, is not the only culture in which royal persons populated their afterlives using depictive art. Qin Shi Huang, the first Chinese emperor, had over 8,000 life-sized terracotta warriors constructed to protect him in the afterlife from spirits of the many people he killed. In general, rites that entomb bodies amidst such representations have a make-believe character.

Many people revere found objects that resemble canonical images of the supernatural agents they worship. Michael Shermer (2006) describes how people congregated and lit candles around the rainbow-colored Virgin Mary shape that appeared on the window of an office building in Clearwater, FL, in 1996. A naïve construal of this behavior is that the devout simply (factually) believed Mary appeared. But their willingness to ignore other, non-Mary-resembling rainbow patterns elsewhere on the windows, as well as ignoring that the sprinklers caused the patterns, suggests another interpretation. They were using the pattern on the glass as a part of a game of religious enactment structured like make-believe play.

[21] In many cases, actual servants and mummified animals, like cats, were entombed as well. But the number of painted servants and creatures typically far outstrips the number of actual (dead) ones.

People from cultures that worship ancestors, which is common in Sub-Saharan Africa, often sacrifice animals to those ancestors, who, according to typical narratives, desire the meat. But as pointed out, the people sacrificing usually eat the meat themselves, which gives this religious enactment its make-believe character.

These are just a few examples. The coffee cup for God, the paintings in the tombs, the terracotta warriors, the Virgin Mary rainbow apparition, and the roasted sacrificial meat are all *r-props*. R-props in games of religious enactment function like props in games of make-believe. The difference is that, instead of prescribing the cognitive attitude of *imagining*, *r-props* prescribe the cognitive attitude of *religious credence*, according to certain *r-principles of generation*. But key points of the rest of Walton's theory carry over.

(a') A *game of religious enactment* is a game in which it is *prescribed* that one *religiously creed* certain propositions according to certain rules, where religious credence is a *cognitive attitude* distinct from factual belief. (Example: in the Virgin Mary game, upon seeing the rainbow Mary pattern one is *supposed to* creed that *it* is Mary; this is a *prescription* of the game.)

(b') The rules mentioned in (a') are *r-principles of generation*; they *generate* prescribed religious credences from facts about r-props.

(c') An *r-prop* is an entity *e* that, according to the r-principles of generation of a game of religious enactment, prescribes that one creed a proposition of the form *p(e)*, which assigns *e* a certain creeded value. (Example: it is prescribed that one creed *of* the Mary-like shape [which is an r-prop] that it is an the Virgin Mary.)

(d') An r-principle of generation is thus a *function* from facts about r-props to prescribed religious credences. Committed players of the game accept such functions consciously or unconsciously. R-principles of generation have the following form:

r-pg(fact about r-prop *e*) = CREED: *p(e)*.

For example, in the Mary game, the main principle of generation is a function of the form:

$\text{r-pg}_{\text{Mary}}$(Mary shape's presence) = CREED: *the shape is Mary*.

As in make-believe, subsidiary principles flow naturally from the main one:

$\text{r-pg}_{\text{Mary}}$'(shape's having appeared in 1996) = CREED: *Mary came in 1996*.
$\text{r-pg}_{\text{Mary}}$''(a bird's landing by the Mary shape) = CREED: *a bird is by Mary*.

The actual r-principles of generation will of course be more complicated than this and include various constraints on what can count as an r-prop, and these

constraints will be more restrictive than the typical constraints on what can be a prop for a game of make-believe. But it is still fair to say that the main points of Walton's theory translate surprisingly well to religious enactment. Before commenting on the significance of this, let me make a further point inspired by Luhrmann.

R-props aren't always external physical objects; they can also be *internal mental events*. An r-prop can be anything that figures into an r-principle of generation, so internal *experiential states* can be r-props too. And *involuntary* internal states are especially good candidates to be r-props. In many cultures, dreams play the r-prop role, where rules for interpreting the dreams are r-principles of generation that yield new credences. And dreams aren't the only internal r-props. Suppose, for example, a pre-Spanish Nahuatl person, who worships the feathered snake god Quetzacóatl, is going through the forest. Suppose this person sees a snake-like figure through the leaves, just as wind rushes through the trees. This will engender auditory and other experiences (hearing wind accompanied by an awesome fright), and these internal experiences can become r-props, to which the person's r-principles of generation might assign the value *hearing the voice of Quetzacóatl*.

Luhrmann highlights what I would call internal r-props in her own subjects. She describes how Vineyard members are often "cherry-picking" mental events to fold into their own narratives of a personal relationship with God.

> They learn to infuse the absent, invisible being with presence by cherry-picking mental events out of their own familiar experience and identifying them as God; they integrate those events into the awareness of a personlike being by using 'let's pretend' play; and then as they shape their own interior world…they learn to react emotionally to that being, as if that being were alive in an ordinary way right now. (131)

If the cherry-picked mental events of Luhrmann's informants are r-props, as I claim, then what are the corresponding r-principles of generation? Luhrmann (63 ff.) characterizes four "rules of discernment," or tests, that Vineyard members use to determine whether their auditory experiences are from God. One asks oneself: (1) "whether what you had heard or imagined was the kind of thing you would say or imagine anyway," (2) "whether it was the kind of thing that God would say or imply," (3) "whether the revelation could be confirmed through circumstances or other people's prayers," and (4) whether it gives "the feeling of peace." If the answer to the first is negative (not the sort of thing you would imagine anyway) and the answers to the others are positive, then one can regard an experience of auditory imagery as being the voice of God (in my terms, one can form a religious credence to this effect). Thus, these tests constitute implicit r-principles of generation that take experiences as input and output religious credence. Importantly, the domain of these r-principles of generation consists of internal mental events.

The significance of the fact that Walton's theory works so well for religious enactment is this: the psychological machinery that supports religious enactment—unless there is a strange and highly redundant duplication in the brain—is largely the *same* as the psychological machinery that supports pretend play. And there is

much reason to think that the psychological machinery that supports pretend play is innate and positioned to interface with other psychological systems, such as action parsing. Pretense is found across cultures. And virtually all children pretend.[22] Furthermore, pretense emerges early, at about a year and a half, without instruction. So my view is that the intricate and largely innate cluster of capacities for pretend play, which facilitates the structure of action detailed in (a)-(d) of section 3.1, also supports the structure of action detailed in (a')-(d') of this section.

Let's now apply the concept of semi-objective character to religious enactment. Importantly, there is often a *voluntary step* in making something an r-prop, and such a step appears in the examples of this section. As one of Luhrmann's informants says: "I can *choose* to believe this is from God, or I can think this is just from me, and the reality is that it could be either, and I know that. There is always a *choice* to believe what it is" (70, my emphasis). Hence, the "semi-" in "semi-objective": since there is a choice, it's not *entirely* objective that one ought to "believe" as one does. Luhrmann remarks:

> At the same time, it seemed to me that those playing never quite forgot that some of what they were doing was self-generated, as if going for a walk with God carried a memory trace of choosing to pretend. These 'let's pretend' practices did seem to make God more real—more emotionally compelling . . . (94)

How can we make sense of the word "real" in this passage? How can pretending make something feel "real"? The answer is that, though one *chooses* to pretend (or to engage in religious enactment), once one has selected the game, with its corresponding r-props and r-principles of generation, it is no longer entirely up to one what credences emerge. Pretending and enacting both involve *choosing to be constrained* by certain (r-)props and principles. And this sense of constraint—that it is not just up to you—accounts for the feeling of something's being "real." And hence the "objective" in "semi-objective": facts in the world, given that one has decided to play the game, *require* that one form certain credences; correspondingly, if the relevant r-props turn out to be different from what one expected, facts about r-props, given certain r-principles, may require that some credences be extinguished.

3.3 R-Props and Apparent Evidence-Responsiveness

Most religious enactments are rituals, ceremonies, prayer episodes, burials, etc. that help people relate overarching narratives of their religions to their own personal narratives. An r-prop can generate credences that put one's personal life into a wider story. R-props allow one to say (and creed), "The Virgin Mary visited *me*." Or, "The servants in the afterlife will serve *me*." But another form of religious enactment occurs less often, and it only sometimes connects personal and overarching narratives. This form of religious enactment arises in cultural contexts in which practices of giving arguments co-exist with religious traditions, such that people are tempted for various reasons to enact a game that merges the two. I call

[22] People on the autism spectrum are exceptions to this general rule, as Simon Baron-Cohen (1995) argues at length.

this The Evidence Game. All the features of religious enactment explained in the last section (points (a')-(d')) are present in The Evidence Game.

The aim of The Evidence Game is to produce a narrative that portrays religious credences themselves as based on evidence. The r-props in this game are events in the world or internal events that can be construed *as evidence* for the contents of a certain religious credence. Just as a stick might resemble a sword, a fact in the world might *resemble* something that would be evidence for the content of a religious credence.[23] The r-principles of generation in The Evidence Game are thus functions from evidence-resembling r-props to further prescribed religious credences, where the r-props constitute apparently rational arguments in support of the contents of the game-initiating religious credences or (less often) against previously held credences.

Our examples from 2.1 can be examples here. Referring to functions in the biological world as "evidence" for intelligent design (even post Darwin), appealing to religious texts as "historical evidence," treating the starting points of systematic theology as "evidence" for downstream conclusions, and appealing to unlikely fortunes to "show" that a favorable god intervened: these behaviors, in my view, are all typically instances of The Evidence Game. What does this mean? It means that, regardless of whether the items appealed to are actually evidence, what mediates their portrayal *as* evidence is largely the same set of psychological mechanisms that mediates use of props in games of make-believe and r-props in other games of religious enactment. Those mechanisms can lead you to imagine a stump is a bear, and they can lead you to creed that an eagle's wing is evidence for intelligent design.

Though it may be hard in practice, telltale signs can help us determine whether a given train of argumentative behavior is really evidence based or is merely an instance of The Evidence Game. Games of make-believe, recall, have *exclusion classes*: items that don't work as props. Religious enactments in general and The Evidence Game in particular thus also have exclusion classes. The exclusion class for any instance of The Evidence Game contains objects or events that *can't* be construed as evidence for the game-initiating religious credences. So if we suspect someone is playing The Evidence Game—as opposed to really working through evidence—we should examine whether that person is *excluding* from consideration items that are evidentially relevant to their claims.

Take, for example, arguments for intelligent design that invoke the second law of thermodynamics. The second law is that entropy increases *in closed systems*. (Roughly, entropy is disorder in how energy is distributed in a system, so the second law says that we should expect energy distribution to become less orderly over time in a closed system, where "closed" means that energy from the outside is neither being injected into, nor escaping from, the system in question.) Now, the biological world consists of a plethora of entities that are physically organized in ways that don't show increasing entropy: highly structured, highly concentrated packages of energy known as organisms. Intelligent design theorists often argue that the biological world's lack of entropy shows that it violates the second law of thermodynamics, and from this they argue there must be an intelligent designer

[23] It might also *be* evidence to some extent, but only resemblance is needed.

guiding the system. Without an intelligent designer giving input, how could the biological world so flagrantly violate the second law? But this "argument" obviously excludes the "*in closed systems*" qualification of the law. If an energy source (like the sun) injects energy into a system, then the law does not predict an increase in entropy.

Furthermore, anyone who understands what entropy is most likely can also understand the qualifier "in closed systems." So why do people appeal to the second law but ignore the "in closed systems" part?[24] I hold this activity is best construed as an instance of The Evidence Game, in which the first portion of the second law makes a fine r-prop for intelligent design credences, but in which the "in closed systems" clause falls in the exclusion class. The second law *resembles* a law that would make a splendid piece of evidence for intelligent design, but part of it needs to be lopped off; the post-amputation law is the r-prop. Similarly, a stick with an awkward branch sticking out might make a good sword prop, as long as you rip off or ignore the awkward branch. In either case, the agent playing make-believe or the agent playing The Evidence Game is making an *active choice* to put something in the exclusion class that doesn't suit her game.

Three additional examples from section 2.1 can also be treated as The Evidence Game. First, when apologists appeal to religious texts as "historical" evidence, texts from *other* religious traditions fall into an exclusion class. Why should the Gospels, including their supernatural portions, be historical documents, but not the Quran? There's not a fair answer to this question. Rather, the Christian apologist's r-principles of generation for her version of The Evidence Game exclude the Quran. Second, the same can be said for systematic theology in any tradition: the r-principles of generation make r-props out of a relatively arbitrary set of canonical texts and exclude any text that is not canonical; from this perspective, arguing over what belongs in a canon amounts to arguing over what will be r-props for *future* instances of The Evidence Game (and other enactments): an item in the canon gets to be an r-prop; ones outside it don't. From this perspective, people who argue over what will be in a canon resemble children who argue over what props can be used in a game of make-believe. (Significantly, genuinely evidence-responsive cognitive enterprises don't need canons, so the existence of a canon in any intellectual enterprise is should lead us to suspect The Evidence Game is being played.) Third, when people appeal to unlikely good fortunes in favor of their religious credences, they typically *exclude* bad fortunes that have occurred to them and others. Nor are people are ignorant of bad fortunes, so their appeals to unlikely good fortunes have the telltale sign of The Evidence Game: an exclusion class with items (i) that are in fact evidentially relevant to the contents of the credence in question and (ii) that are known about by the person making the "arguments." In all three kinds of example—"historical" apologetics, systematic theology, and appeal to unlikely fortunes—the selection of r-props (and the exclusion of items in the exclusion class) may be

[24] Sometimes it's worse than ignoring. Charles Thaxton *et al.* (1984) and Jonathan Safarti (online) actually try to argue that the "in closed systems" qualifier doesn't undermine the intelligent design argument based on the second law. But making an argument like this, of course, involves ignoring other things, which simply masks the fact that there is an exclusion class, rather than getting rid of it.

accompanied by certain internal twinges, pangs, and prompting that are felt to urge people one way or another in interpreting the 'evidence'; these internal events, too, often become their own r-props.

The present perspective, furthermore, gives us a simple solution to the puzzle of petitionary prayer. To give an example from Boudry and De Smedt (2011): why do people tend to pray for cancer to be cured but not for amputated limbs to grow back? If God is omnipotent, why not? The answer is that one's background factual beliefs about what is biologically possible entail that prayers for regenerating limbs won't make good r-props. So those prayers are excluded. A prayer for a limb to grow back has bad prospects for being an r-prop. So one simply doesn't try. A prayer for cancer to be cured, however, may turn out to be an excellent r-prop, since if the cancer does go into remission (which is factually believed to be possible), one can make one's prayer an r-prop in a game of religious enactment.

We can now see clearly how The Evidence Game contrasts with genuine evidential vulnerability. With genuine evidential vulnerability (as defined) there is no exclusion class; rather, *anything* that could bear evidentially on the content of a given factual belief, either directly or by way of other factual beliefs, is a potential extinguisher of that belief (this is a consequence of the lack of restriction in clause ii.). So genuinely evidentially vulnerable attitudes—and the practices that yield them—have no exclusion classes. Everything is potentially relevant. The web of factual belief is a genuine web.

Again, it may be hard to tell whether a given person has genuinely evidentially vulnerable religious#credences (or factual beliefs) or is just playing The Evidence Game. In my view, players of The Evidence Game often don't realize themselves that this is what they are doing. And it shouldn't be easy to tell whether The Evidence Game is being played, even for the players themselves, since part of the *point* of it is to give the appearance of genuine responsiveness to evidence: one playing The Evidence Game in defense of a religious credence that *p* will in many ways behave *as if* she had an evidentially vulnerable factual belief that *p*, so coming to a view about whether a person has a religious credence that *p* or a factual belief that *p* will always be a matter of arriving at the best overall theory of that person's psychology. One way of looking at this paper is that it contains tools for constructing better theories, theories that will often have the following form: in a broad range of cases, the mechanisms that underlie apparent evidential responsiveness on the part of religious credences are the *same* as the psychological mechanisms behind pretend play. There is, I grant, much work to be done in cognitive science to flesh out this claim, not least of all because the mechanisms behind pretend play are still a matter of dispute[25]. But the claim provides a theoretically useful way of looking at many religious behaviors and attitudes that seem baffling otherwise.[26]

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[25] For some of the debate, see Shaun Nichols and Stephen Stich (2003), Ori Friedman and Alan Leslie (2007), and Stephen Stich and Joshua Tarzia (2015).

[26] One anonymous referee has pointed out that much of what I say about The Evidence Game can also be said about scientific practice. So if, to continue the worry, The Evidence Game explains why religious credences appear evidentially responsive without being so, doesn't it follow that scientific attitudes also *appear* evidentially responsive without being so? Actually, this doesn't follow. My

4 An Objection: Can Contents and Cultural Evolution Do All the Work?

Where are we so far? I made it clear in section 2 that there is a puzzle about whether religious credences respond to evidence. Some appear to respond to evidence, and some do not. But I claimed that the appearance that they do is unconvincing, since they are not evidentially vulnerable in the sense that is relevant to characterizing the space of cognitive attitudes as a whole. This claim put me in the position of having to explain where the deceptive appearances of evidential responsiveness come from; to explain this, I developed the notion of The Evidence Game.

I now consider an alternate possible explanation of the data. Maarten Boudry and Johan Braeckman (2012) argue that systematic features of the *contents* of religious "belief" systems render such systems immune to disconfirmation. For example, they point out that religious predictions (or other ideological predictions) often have "multiple end points": a prediction will come with a literal interpretation and a metaphorical interpretation, which immunizes the underlying "beliefs" against disconfirmation. Alternately, religious and other thought systems often come with conspiracy thinking and invisible escape clauses, which make it hard for data to impinge on them. If all this is so, one might attempt to develop a "content only" explanation for why religious attitudes often fail to respond to evidence: it's not that their attitude type is any different—as attitudes, they're just "beliefs" like any other evidentially vulnerable belief—rather their contents alone make them immune.[27]

This suggestion[28] deserves a fuller treatment than I can give here. But let me give reasons why I am skeptical. To be clear, I am *not* skeptical of the claim that many religious "beliefs" have self-immunizing contents; Boudry and Braeckman are right about that. Rather, I am skeptical of the view that *all* the data that need to be explained can be handled well by a "content only" view. First and foremost, a view like this seems to predict that exposure to evidence would be a more common reason why people abandon religious "beliefs" than it actually is: people with evidentially vulnerable religious attitudes would often eventually see through the

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theory of The Evidence Game is meant as an explanation of why a given kind of attitude would appear evidentially responsive, whether or not it is; however, the fact that an attitude is a product of The Evidence Game does *not* entail that that attitude is invulnerable to evidence. It's just part of what I think is our best overall theory of the data, including many examples, that religious credences are not vulnerable to evidence. But our best overall theory of scientific attitudes will be much different. Correspondingly, the resemblance of scientific practice to The Evidence Game does not entail that scientific attitudes are not vulnerable to evidence. This worry can also be flipped around. One might say that, since The Evidence Game resembles scientific practice and scientific practice does respond to evidence, The Evidence Game responds to evidence too. My response here is to grant that The Evidence Game might involve "evidence responsiveness" in some weaker sense, but it does not yield the property of *evidential vulnerability*, which is the form of evidential responsiveness that is relevant to distinguishing cognitive attitudes. So I can grant this version of the worry, while still maintaining my overall thesis.

[27] The Boudry and Braeckman paper does not argue that religious "beliefs" are just like any other doxastic attitude; however, their account makes that argument available—which is a challenge to my view—by attempting to explain the surprising features of religious "beliefs" by appeal to structural features of their contents. One might think, on reading their paper, that it renders an attitude approach, such as I take, unnecessary.

[28] Due to an anonymous referee.

thicket of misleading contents and start to reject their evidentially refuted religious doctrines; otherwise put, evidentially vulnerable religious beliefs, even with content features that Boudry and Braeckman identify, would be much more unstable than we in fact see. Now, sometimes exposure to evidence does seem to undermine religious credence, as I discuss in the next section, but this is not how departure from religious *usually* works. Rather, people tend to leave religions, when they do, for *social* and *moral* reasons; they only rarely abandon religious credences due to evidence (Roozen 1980; Sauvayre 2011). Second, most religious people just don't seem to care about evidence for their credences. The Evidence Game is played mostly by intellectuals and apologists. The more usual lack of concern with evidence suggests to me that something about the attitude itself is evidentially invulnerable. Third, we have to ask *how* the self-immunizing contents get there in the first place. Boudry and Braeckman suggest that they are the product of cultural evolution: religious "belief" systems that didn't have them were weeded out historically; ones that did have them survived. To me, however, this suggests a much too *passive* picture of how the self-immunizing contents of religious credences are generated.[29] It is not as if they are stumbled upon by passive ideational mutation; rather, they often appear to be actively generated on the fly—often improvised by lay people and "experts" alike (Boyer 2001: 302; Legare and Gelman 2008: 636). And if it's true that the religious often *invent* self-immunizing strategies for their beliefs, then it is likely that those very strategies are the products of the sorts of creative processes that I identify in this paper. But those creative processes—religious enactment and The Evidence Game—are characteristic of religious credence and not of factual belief, which sits ill with a "content only" explanation of the data in question.

There is much more on this matter to be said. But at least, at this point, my reasons for positing an attitude-based explanation of the evidential invulnerability of religious credences—as opposed to a "content only" explanation—should be clear.

5 Conclusion: Evidence and Apostates

The main reason for adopting the Evidence Game Thesis and its corresponding theory is that they solve the puzzle presented in section 2. They explain the *appearance* of evidence responsiveness on the part of religious credences: that appearance is due to The Evidence Game. But the discussion so far has made three other reasons for agreeing with me available as well. First, the solution given here is parsimonious in that it appeals to psychological structures we have independent reason to posit (both in making sense of make-believe and in making sense of ritual); it is thus a unifying explanation (Friedman 1974). Second

[29] To be fair, Boudry and Braeckman do allow that there can be some active generation of new religious ideas. But two points should be made. First, their overall picture is a fairly passive one, which sits ill with the improvisatory character of much religious idea generation. Second, to the extent that they *do* allow that religious idea generation can be active (which I call *creative elaboration*) their view does not help someone who is trying to use it to object to my view, since creative elaboration sits ill with evidential vulnerability and is not characteristic of factual belief in any case.

and relatedly, my view coheres with the overwhelmingly supported view in cognitive science of religion that religious cognitions and behaviors are outcroppings of psychological mechanisms that exist *independently* of religion (Boyer 2001; McCauley 2011; Norenzayan 2013). Memory systems, agent detection, in-group/out-group distinctions, concern with death, etc. all exist independently of religion (even broadly construed), but they all feed into it; if I am right, the same can be said for the psychological mechanisms behind pretend play: they exist independently of religion, but they feed into it. Third, my view helps explain the *active* nature of the content generation among religious credences. Much religious credence is indeed inherited from culture, but processes like regarding certain internal mental events as the voice of God are, as Luhrmann would put it, a matter of *choice*. The Boudry and Braeckman cultural evolution model, though it explains much, leaves such active choices unexplained; such credence-generating choices, however, are well accounted for by my theory.

One more question remains. Recall from 2.1 that some people claim to leave religion due to encounter with science. This suggests, *prima facie*, that their religious "beliefs" were responsive to evidence after all. But my view says religious credences are not evidentially vulnerable. So how am I to make sense of people leaving religion due to encounter with science? Of course, some people may at some point in their lives have had factual beliefs with religious/supernatural contents, which then got extinguished by evidence over time. This is fairly straightforward. But I don't think that's what is *usually* going on when scientifically minded people leave religion (which, again, is not the most usual trigger for people to leave religion anyway).

Rather, I think we have the following. As we saw from the intelligent design treatment of the second law of thermodynamics, it is quite possible for important scientific principles (or parts of them) to fall in the exclusion class of an instance of The Evidence Game. Since religious credences are identity-constituting attitudes, one holding them *must* play the relevant games whenever one's identity is in question. It follows that if various scientific facts or laws are in the exclusion class of one's religious identity-constituting game, one who has the relevant religious credences is *required* to publically ignore or alternately construe those facts and laws. And in my view, many people who are attracted to science at some level feel that The Evidence Game's frequent distortion of scientific fact is deceptive, both of oneself and others. The difference between the Evidence Game and normal games of make-believe is that, in normal games of make-believe, one is allowed to whisper, "This is not actually real." And one stops playing when one feels like it. But though the psychological mechanisms of the Evidence Game parallel those of make-believe play, one is required by religious identity to affirm, whenever the question arises, "Yes, this is real." Thus, most scientifically minded people are perfectly happy with the most outlandish science fiction, precisely because after or even during the play they are free to whisper, "This is not actually real." But having, as a matter of *identity*, to say "Yes, this is real" about distortions of science is apt to trigger revulsion in many people.

So this is my explanation for why people can be moved by science to abandon religious credence. The games of religious enactment that produce religious

credences (in many religious traditions) require following r-principles of generation that leave much scientific knowledge in the exclusion class—and even require distortion of it. If one loves science, one will be less inclined to play these games.

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